Consolidated Water Use Efficiency 2002 PSP
Proposal Part One:
A. Project Information Form

1. Applying for (select one):
   - ☒ (a) Prop 13 Urban Water Conservation Capital Outlay Grant
   - ☐ (b) Prop 13 Agricultural Water Conservation Capital Outlay Feasibility Study Grant
   - ☐ (c) DWR Water Use Efficiency Project

2. Principal applicant (Organization or affiliation): East Bay Municipal Utility District

3. Project Title: Energy Star Commercial Clothes Washer Rebate Program

4. Person authorized to sign and submit proposal:

Name, title	Dennis M. Diemer General Manager
Mailing address	P.O. Box 24055, Oakland, CA 94623-1055
Telephone	(510) 287-0101
Fax.	(510) 287-0188
E-mail	

5. Contact person (if different):

Name, title.	Michael Hazinski, Water Conservation Supervisor
Mailing address.	P.O. Box 24055, MS #48, Oakland, CA 94623-1055
Telephone	(510) 287-0898
Fax.	(510) 287-1802
E-mail	mhazinski@ebmud.com

6. Funds requested (dollar amount): $240,300

7. Applicant funds pledged (dollar amount): $165,000

8. Total project costs (dollar amount): **$405,300**

9. Estimated total quantifiable project benefits (dollar amount): **$1,766,630**
   Percentage of benefit to be accrued by applicant: **10%**
   Percentage of benefit to be accrued by CALFED or others: **%100**

Consolidated Water Use Efficiency 2002 PSP
Proposal Part One:
A. Project Information Form (continued)

10. Estimated annual amount of water to be saved (acre-feet): **105 af**

Estimated total amount of water to be saved (acre-feet): **1,046 af**

Over ___ years **10 years**

Estimated benefits to be realized in terms of water quality, instream flow, other: **$0-$25/AF**

11. Duration of project (month/year to month/year): July 2002 - June 2004

12. State Assembly District where the project is to be conducted: 11,14,15,16,18

13. State Senate District where the project is to be conducted: 7,9,10

14. Congressional district(s) where the project is to be conducted: 7,9,10

15. County where the project is to be conducted: Alameda & Contra Costa

16. Date most recent Urban Water Management Plan submitted to the Department of Water Resources: January 2002

17. Type of applicant (select one):
Prop 13 Urban Grants and Prop 13 Agricultural Feasibility Study Grants:

- ☐ (a) city
- ☐ (b) county
- ☐ (c) city and county
- ☐ (d) joint power authority
- ☒ (e) other political subdivision of the State, including public water district
- ☐ (f) incorporated mutual water company

DWR WUE Projects: the above entities (a) through (f) or:

- ☐ (g) investor-owned utility
- ☐ (h) non-profit organization
- ☐ (i) tribe
- ☐ (j) university
- ☐ (k) state agency
- ☐ (l) federal agency

18. Project focus:

- ☐ (a) agricultural
- ☒ (b) urban

Consolidated Water Use Efficiency 2002 PSP
Proposal Part One:
A. Project Information Form (continued)

19. Project type (select one):
Prop 13 Urban Grant or Prop 13 Agricultural Feasibility Study Grant capital outlay project related to:

- ☒ (a) implementation of Urban Best Management Practices
- ☐ (b) implementation of Agricultural Efficient Water Management Practices
- ☐ (c) implementation of Quantifiable Objectives (include QO number(s)

  ☐ _____
- ☐ (d) other (specify)

  ☐ _____

DWR WUE Project related to:

- ☐ (e) implementation of Urban Best Management Practices
- ☐ (f) implementation of Agricultural Efficient Water Management Practices
- ☐ (g) implementation of Quantifiable Objectives (include QO number(s))
- ☐ (h) innovative projects (initial investigation of new technologies, methodologies, approaches, or institutional frameworks)
- ☐ (i) research or pilot projects
- ☐ (j) education or public information programs
- ☐ (k) other (specify)

  ☐ _____

20. Do the actions in this proposal involve physical changes in land use, or potential future changes in land use?

- ☐ (a) yes
- ☒ (b) no

If yes, the applicant must complete the CALFED PSP Land Use Checklist found at http://calfed.water.ca.gov/environmental_docs.html and submit it with the proposal.

Consolidated Water Use Efficiency 2002 PSP
Proposal Part One
B. Signature Page

By signing below, the official declares the following:

The truthfulness of all representations in the proposal;

The individual signing the form is authorized to submit the proposal on behalf of the applicant; and

The individual signing the form read and understood the conflict of interest and confidentiality section and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant.

_____	_____	_____
Signature	Name and title	Date

Proposal Part Two

Project Summary

East Bay Municipal Utility District (EBMUD) is pleased to present this proposal for funding of the District's ENERGY STAR® Commercial Clothes Washer Rebate Program. This program was launched in 2001 as a pilot program in cooperation with Pacific Gas and Electric Company. For program years 2002 and 2003, the program will offer rebates of $350 per qualifying washer to coin-operated Laundromats and $250 per machine to other commercial and multi-family residential accounts. EBMUD is requesting funding to cover administrative, marketing, and assessment costs, and the first $100 of the rebate, with the remainder to come from EBMUD.

Table 1 summarizes the scope, savings and benefits:

Table 1: Project Summary

Project Period	July 1, 2002 – June 30 2004
Targeted number of clothes washer installations rebated	900
Market sectors targeted	Multi-family apartments, Laundromats
Proposed Funding Amount	$240,300
EBMUD Cost Share	$165,000
Total Project Cost	$405,300
Total Energy Savings (kWH)	45,202,000
Total Water Savings (AF)	1,046
Benefit/Cost Ratio to Applicant	1.17

A. Scope of Work: Relevance and Importance

1. Nature, Scope, and Objectives of the Project

The objective of the ENERGY STAR Commercial Clothes Washer Rebate Program is to achieve cost-effective energy and water savings by increasing and accelerating the adoption of high-efficiency commercial clothes washers among Laundromats, multi-family buildings, hotels, and other businesses with coin/credit card-operated laundry facilities in the EBMUD service area.

The primary target markets are coin laundries and common-area laundry facilities at multi-family housing complexes. Additional opportunities exist in hospitals, hotels, and dry cleaners. Within this market, the program expects to provide rebates for 900 ENERGY STAR labeled commercial clothes washers over a two-year period.

High-efficiency clothes washers save up to 62 percent of gas costs, 23 percent of electricity costs, and use almost 50 percent less water.[1] They achieve energy and water savings by reducing the amount of water used per wash cycle. The majority of energy savings are achieved in most high-performance washers by reducing the hot water used. A smaller but significant portion of the energy savings is achieved through higher motor efficiency. In addition, because they extract more moisture from the washed clothes during the spin cycle, it takes less time and therefore less energy to dry the clothes.

EBMUD promotes the program through outreach to coin-laundry associations, equipment leasing companies, laundry equipment distributors, property owners' associations, and selected industry associations. Other marketing activities include direct mail to targeted business segments, promoting the washer rebates on the EBMUD website, and distributing printed promotional material at trade shows. In 2002, the program will expand its efforts to promote the technology through demonstration projects and workshops. EBMUD will also explore co-op advertising opportunities with these groups or other water agencies serving customers in the East Bay.

EBMUD's program is coordinated with that of the Consortium for Energy Efficiency (CEE). CEE's list of qualified clothes washers serves as the EBMUD program definition of "high-efficiency." Because multiple utilities and public agencies use the same CEE definition, manufacturers can offer the same qualifying products across multiple markets, thus increasing their incentive to participate.

Finally, this program will actively coordinate with the DOE/EPA ENERGY STAR equipment-labeling program. On June 1, 2001, the ENERGY STAR program added commercial washers to the 31 other labeled products. EBMUD is an ENERGY STAR partner and is authorized to use the ENERGY STAR name and logo in its education and publicity efforts.

2. Statement of Critical Local, Regional, Bay-Delta, State or Federal Water Issues

Water savings from increased and accelerated adoption of high-efficiency commercial clothes washers has the potential to positively impact the Bay-Delta system by reducing the overall reliance on Bay-Delta and tributary system water exports. The District's water conservation efforts are an important component of a long-term, integrated resources plan; a comprehensive effort to reliably meet the water needs of District customers and reduce pressure on the Bay-Delta system to meet regional and statewide water needs. One of the fundamental objectives of the CALFED Bay-Delta Program is to reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system. Water use efficiency projects are one of the cornerstone strategies the CALFED Bay-Delta program is deploying to achieve this objective.

[1] http://www.cee1.org/com/cwsh/cwsh-main.php3

B. Scope of Work: Technical/Scientific Merit, Feasibility, Monitoring, and Assessment

1. Methods, Procedures and Facilities

This program represents a continuation of a pilot-program EBMUD initiated in cooperation with PG&E. Beginning in January 2001, EBMUD administered a joint rebate with PG&E of up to $250 for installation of qualifying high-efficient commercial-grade clothes washers. District customers were offered $50 per washer installed in multi-family housing and hotels or motels and $150 per washer installed in coin-operated laundries, where per-machine usage and potential water and energy savings are higher. PG&E added a $100 rebate per washer installed at customer sites served by both EBMUD and PG&E. Commercial Laundromats, apartment owners, laundry equipment distributors, and leasing companies were targeted for direct mailings announcing the rebate program. Since January 2001, EBMUD rebated 121 installations. Although participation in the program was higher than the previous program, it was lower than expected and may have been a result of the recent economic slowdown or a less-than-effective incentive amount. For FY02-03, the program will seek to increase the rebate amount and expand program marketing efforts.

Program Enrollment Process. Laundry owners interested in participating in the rebate program can get the application through any of the following channels:

- call the water conservation hotline at 510-287-0590;
- send an email to wtrcserv@ebmud.com;
- download information and the form from the EBMUD website www.ebmud.com

In addition, EBMUD will provide program information and application forms to local property owners' associations, industry associations, and retailer/distributor show rooms.

***Marketing and Outreach Plans*.** EBMUD will reach its target market primarily by working with equipment distributors and route operators. Distributors maintain direct contact with the extensive network of laundry facility owners. Route operators are the primary decision-makers for most multi-family laundry facilities. According to CEE, the majority (50–60 percent) of multi-family housing complexes lease their laundry facilities to a route operator. Route operators supply equipment and maintain laundry facilities in exchange for a share of the revenue. The Multi-Housing Laundry Association estimates that there are 175 route operators in the U. S. These companies range in size from small, local businesses to large, national or regional corporations. By working with distributors and route operators, EBMUD will greatly leverage its marketing resources.

In addition to leveraging the marketing efforts of distributors and route operators, EBMUD will reach out directly to Laundromats and other laundry equipment owners through a variety of channels:

- **Point-of-purchase.** Program staff will conduct store visits to appliance retailers and distributors and place point-of-purchase materials in retail outlets and equipment showrooms. This type of outreach has been key to the success of the residential clothes washer program because it increases program visibility to the buying public and salespersons. Routine visits serve to maintain program visibility and build relationships with sales managers and sales staff.
- **Educational materials.** EBMUD will prepare fact sheets about benefits and proper use of high-efficiency washing machines for distribution in coin-operated laundries. In addition, EBMUD will periodically include bill inserts describing the program to multi-family property owners, laundry owners, and other target markets.
- **Industry trade associations.** EBMUD will work with key industry associations to promote the program via association newsletters, mailings, and other channels. Key groups include the Coin Laundry Association, Multi-Housing Laundry Association, Rental Housing Association of Northern Alameda County, and Berkeley Property Owners Association.
- **Trade shows.** EBMUD will provide program information at trade shows sponsored by laundry equipment distributors.
- **Demonstration projects and media events.** The program will sponsor high-profile events to demonstrate the tangible benefits of high-efficiency washers to the public and generate positive media coverage in the process. For example, the District may work with a high-traffic Laundromat to install program washers in the facility, free of charge, and offer free washes to customers at predetermined times. The machines would be equipped with data loggers to demonstrate the savings to the laundry owner. Users would be asked to describe their experience using the new machines. The press would be invited to attend these promotional events.
- **Website**. EBMUD's Internet site will keep the community updated on the rebate program. A customer will be able to find information on where to purchase qualifying washing machines, how to apply for the rebate, energy and water savings statistics, and contact phone numbers to answer customer questions.
- **Water conservation hotline.** EBMUD will publicize and encourage customers to call the water conservation hotline for immediate response to their questions. A District staff member knowledgeable about the rebate program will be available to answer customer concerns.

Procedures for Equipment Purchase or Installation. Customers installing qualifying clothes washers under the program will be required to meet the following conditions:

- Qualified equipment must be installed at the facility served by EBMUD and PG&E and must be installed according to local building codes and ordinances and manufacturer's requirements.
- Fully completed applications must be and submitted within 60 days of equipment purchase.
- Original sales receipts and a copy of the most recent PG&E billing statement for the service address must accompany applications.
- EBMUD will conduct post installation inspection to verify washer serial number.

EBMUD publishes a list of equipment qualified for this rebate on its website. All models are ENERGY STAR labeled and have been pre-qualified by the Consortium for Energy Efficiency as high-efficiency commercial clothes washers.

Incentive Payment Process. All rebate items must be purchased and installed prior to submitting an application. To apply for a rebate, the customer must fill out the application and mail it to EBMUD, along with a paid, itemized invoice and a copy of the most recent PG&E billing statement for the service address. Applications are accepted on a first-come, first-served basis until allocated funds are spent or until the end of the program year, whichever comes first. After receiving completed applications from customers, EBMUD will either credit the rebate to the customer's water account within 90 days or issue rebate checks to eligible applicants who are not EBMUD customers of record.

Coordination with Other Programs. Coordination with the Consortium for Energy Efficiency (CEE) is a key element of the EBMUD washer program. Manufacturers submit data about their clothes washers to CEE based on U.S. Department of Energy (DOE) residential washer test procedures. CEE then qualifies their products at the appropriate efficiency tier level.[2] CEE's list of qualified products serves as the EBMUD program definition of "high-efficiency." Because multiple utilities and public agencies use the same CEE definition, manufacturers can offer the same qualifying products across multiple markets, thus increasing their incentive to participate. EBMUD also benefits from the extensive market research that the CEE conducts.

For the 2002 program, an additional coordination opportunity has emerged. On June 1, 2001, the ENERGY STAR program added commercial washers to the 31 other labeled products. In the past, only residential washers qualified for the label but ENERGY STAR has decided to develop a separate label for commercial models with volume of 3.5 cubic feet or less. In order to qualify for the label, the washer must meet the minimum Modified Energy Factor (MEF) requirement of 1.26. As an ENERGY STAR partner, EBMUD complies with the ENERGY STAR Logo Use Guidelines in promoting labeled clothes washers.

[2] http://www.cee1.org/resrc/facts/cwsh-fx.php3

EBMUD also coordinates closely with other water districts in the region. EBMUD currently offers rebates for residential high-efficiency clothes washers through a regional alliance of water districts that includes the City of Davis, Alameda County Water District, Contra Costa Water District, Santa Clara Valley Water District, Marin Municipal Water District, and the Zone 7 Water Agency. To date, besides EBMUD, only Santa Clara Valley Water District has implemented a commercial clothes washer program. Thus the success of EBMUD's program can be expected to prompt wider promotion of these commercial technologies throughout the region.

As previously indicated, the program features close coordination with local coin-laundry associations and equipment distributors. The clothes washer program is also thoroughly integrated with other EBMUD programs and activities.

2. Task List and Schedule

The following schedule identifies key milestones in program implementation and reporting. A schedule for targeted rebates recognizes the lag time needed to establish and implement marketing and outreach activities and reduced program participation later in the program periond due to increased market saturation.

Table 2: Project Tasks and Hardware Installation Schedule

Dates	TASK
July 2002	Execute final contract
July 2002 – Sept. 2002	Procure marketing and assessment services
Sept. 2002	Prepare monitoring and assessment plan
Sept 2002 – Dec. 2002	Establish and implement marketing strategies
Sept. 2002 – June 2004	8 Quarterly Reports
October 2002	Implement first demonstration project/event
Dec. 2002 – June 2003	Implement ongoing advertising and outreach
April 2003 – June 2003	Conduct first program year evaluation
May 2003	Implement second demonstration project/event
July 2003 – June 2004	Implement ongoing advertising and outreach
April 2004 – June 2004	Conduct second program year evaluation
Sept. 2004	Final program report
Hardware Installation Targets	
July 2002 – Sept 2002	50 units
Oct. 2002 – Dec. 2002	100 units
Jan. 2003 – June 2003	300 units
July 2003 – Dec. 2003	300 units
Jan 2004 – March 2004	100 units
March 2004 – June 2004	50 units
Total Installations	900 units

3. Monitoring and Assessment

Evaluation Objectives. The evaluation plan for the ENERGY STAR Commercial Clothes Washer Rebate program will be designed to meet the following objectives:

- Measure level of water and energy savings achieved
- Measure cost-effectiveness
- Measure indicators of the program effectiveness, including testing of the assumptions that underlie the program theory and approach
- Assess whether there is a continuing need for the program

Energy and Water Savings. The program tracking system includes procedures, policies, protocols, forms, data entry and the data storage methods. The foundation of this system is a database that tracks the following information:

- Name, addresses, and contact information of participating businesses
- Equipment brand name and model number
- Total rebate amount
- Total purchase cost
- Water heating fuel (natural gas, electric, or other)
- Fuel of clothes dryer(s) (natural gas, electric, or other)

The program will negotiate access to manufacturer specifications and CEE test results for qualifying clothes washers. Thus, given the customer-specific information in the above list, the program can calculate the efficiency of each rebated washer relative to the standard-efficiency baseline. Per-cycle electric, gas, and water efficiency can then be multiplied by the average number of cycles to derive total energy and water savings per unit.

Cost-effectiveness. Program costs, EBMUD-defined avoided costs, and per-unit energy and water savings will be used to determine actual program cost-effectiveness.

Tests of Program Theory and Approach The basic program theory consists of three elements:

- Utility rebates and information about the economic benefits of high-efficiency clothes washers will spur accelerated cost-effective investments in this commercial-sector technology.
- Increased sales levels and increased market share will stimulate competition, which will drive down incremental purchase costs.
- Increased sales levels and increased market share will translate into greater customer familiarity with the technology and improved customer acceptance.

To test the first element, the program will track the number of washer rebates. We will also monitor the number of new manufacturers that join the CEE nationwide program. To test the second element, we will monitor retail costs of qualifying equipment, as recorded on participants' program applications. Feedback from trade ally distributors and retailers will provide an important indicator of customer acceptance.

***Program Continuation*.** This evaluation element consists of evaluating the status of primary market barriers and indicators of sustainability over time. This program will focus on three key indicators:

- Incremental cost of high-efficiency clothes washers relative to standard-efficiency units
- Customer acceptance of high-efficiency clothes washers
- High-efficiency clothes washer market share

Synthesizing information relating to these indicators from prior tasks, the evaluation plan will establish benchmarks that reflect a significant probability of sustainable impacts. Sustainability in this context is intended to mean that adoption levels for targeted equipment will hold steady or continue to increase in the absence of the program.

***Baseline Information*.** A wealth of publicly available market data and market research results is available, making further baseline market research unnecessary. References to relevant sources include:

- Battelle Pacific Northwest Laboratory (2000), Southern California Edison High-Performance Clothes Washer Demonstration at Leisure World Laguna Woods, prepared for Southern California Edison Company.
- Consortium for Energy Efficiency (1998) Commercial Family-Sized Washers: An Initiative Description of the Consortium for Energy Efficiency.
- East Bay Municipal Utility District (2001), Water Conservation Market Penetration Study.
- National Research Center, Inc. (2001), A National Study of Laundry-water Use in Multi-Housing, prepared for the Multi-Housing Laundry Association.
- New Technology Demonstration Program (2000), Assessment of High-Performance, Family-Sized Commercial Clothes Washers, DOE/EE-0218, prepared for the Federal Energy Management Program

These reports are bolstered by a number of evaluations and market studies of the residential-sector clothes washer market.

On-site Inspections. Ten percent of the projects will be selected for on-site inspection. Inspectors will visit each sampled site and verify that washers documented in the project file were actually installed and functioning properly. Any discrepancies will be documented and estimated energy impacts will be revised accordingly.

C. Qualifications of the Applicants, Cooperators, and Establishment of Partnerships

1. Resumes

Resumes for the EBMUD project managers are inserted at the end of this proposal:
Richard W. Harris, Water Conservation Manager
Michael Hazinski, Water Conservation Supervisor
James Carmody, Water Conservation Representative

Richard Harris, Water Conservation Manager. Mr. Harris oversees the development and implementation of EBMUD's Water conservation master Plan in support of long-term water supply and demand management goals. With an annual budget of more than $5 million, and a total projected program budget of $92 million, EBMUD's water conservation efforts represent one of the largest staffed and budgeted conservation programs among major water utilities in California. Mr. Harris is a licensed civil engineer and has been at EBMUD for more than 11 years. Prior to joining the Water Conservation Division, he managed the District's water Recycling Program. Mr. Harris continues to serve as a District spokesperson on water use efficiency, and serves on the Steering Committee of the California Urban Water Conservation Council. Mr. Harris has more than 17 years experience in the environmental systems planning, engineering, and resource management, and worked a number of years in the private sector specifically in the environmental engineering and energy management fields for Combustion Engineering Environmental, Inc. and Guaranteed Energy Savings, Inc.

Michael Hazinski, Water Conservation Supervisor. Mr. Hazinski has ten years of experience in implementing a wide range of water-use-efficiency programs. Michael's current responsibilities include the recruitment and training of water conservation staff, procuring consulting services and administering contracts for research and program implementation, and representing EBMUD on interagency water conservation committees. Michael also evaluates conservation programs and recently managed the completion of a comprehensive EBMUD Water Conservation Market Penetration Study. He holds a Bachelor of Arts degree in Design and Industry from San Francisco State University and has extensive training in Landscape Architecture and Horticulture.

Jim Carmody, Water Conservation Representative. Mr. Carmody has been with the Water Conservation Office at EBMUD for almost two years. He is part of the Commercial, Industrial and Institutional (CII) Group and has become the main EBMUD Representative working with the District's industrial and commercial customers to which he recommends water conserving measures and determines whether the measure will qualify for EBMUD financial incentives. In addition, he manages the joint EBMUD/PG&E Pilot Commercial Clothes Washer Rebate Program. Prior to joining EBMUD, Mr. Carmody worked in the environmental consulting industry managing soil and groundwater contamination studies for governmental agencies and private industrial clients. He holds a Bachelor of Arts degree from San Francisco State University and is a California Registered Geologist and Certified Hydrogeologist.

2. External Cooperators.

Coordination with the Consortium for Energy Efficiency (CEE) is a key element of the EBMUD washer program. Manufacturers submit data about their clothes washers to CEE based on U.S. Department of Energy (DOE) residential washer test procedures. CEE then qualifies their products at the appropriate efficiency tier level.[3] CEE's list of qualified products serves as the EBMUD program definition of "high-efficiency." Because multiple utilities and public agencies use the same CEE definition, manufacturers can offer the same qualifying products across multiple markets, thus increasing their incentive to participate. EBMUD also benefits from the extensive market research that the CEE conducts.

For the 2002 program, an additional coordination opportunity has emerged. On June 1, 2001, the ENERGY STAR program added commercial washers to the 31 other labeled products. In the past, only residential washers qualified for the label but ENERGY STAR has decided to develop a separate label for commercial models with volume of 3.5 cubic feet or less. In order to qualify for the label, the washer must meet the minimum Modified Energy Factor (MEF) requirement of 1.26. As an ENERGY STAR partner, EBMUD complies with the ENERGY STAR Logo Use Guidelines in promoting labeled clothes washers.

EBMUD also coordinates closely with other water districts in the region. EBMUD currently offers rebates for residential high-efficiency clothes washers through a regional alliance of water districts that includes the City of Davis, Alameda County Water District, Contra Costa Water District, Santa Clara Valley Water District, Marin Municipal Water District, and the Zone 7 Water Agency. To date, besides EBMUD, only Santa Clara Valley Water District has implemented a commercial clothes washer program. Thus the success of EBMUD's program can be expected to prompt wider promotion of these commercial technologies throughout the region.
As previously indicated, the program features close coordination with local coin-laundry associations and equipment distributors. The clothes washer program is also thoroughly integrated with other EBMUD programs and activities.

D. Costs and Benefits

1. Budget Breakdown and Justification

The proposed Energy Star Commercial Clothes Washer Program budget includes salaries & benefits for EBMUD administration of the program and the grant funding. Benefits are estimated at 50 percent of salaries. These budget items include the cost to enroll participants in the program, staff a water conservation hotline, process and track incentive payments, procure services and administer contracts for program marketing and evaluation, and to report on program results. Other non-labor costs include supplies, printing, and services required for program, grant, and contract administration.

[3] http://www.cee1.org/resrc/facts/cwsh-fx.php3

EBMUD will procure professional services to implement the marketing and monitoring and assessment plans. These are essential components of the outlay required to achieve installation of clothes washers in commercial and multi-family settings. The marketing plan addresses barriers to the adoption of the technology. The assessment plan budget is commensurate with the overall program budget while being designed to identify market impacts and savings attributable to the program.
Proposed funding of rebates at $100 per clothes washer combined EBMUD funded rebates at $150 and $250 for multi-family and commercial sectors respectively directly addresses the barrier of high incremental cost for purchasing high-efficiency clothes washers.

Table 3: Project Budget Summary

Item	First Year Cost	Second Year Cost	Total Cost
Grant Administration Costs	$7,950	$6,950	$14,900
Program Administration Costs	$33,050	$21,650	$54,700
Marketing/Advertising/Outreach Costs	$36,600	$19,400	$56,000
Monitoring and Assessment Costs	$13,100	$11,600	$24,700
450 Units Rebated per Year	$45,000	$45,000	$90,000
Proposed Funding	**$135,700**	**$104,600**	**$240,300**
EBMUD Cost Share (rebates)	$82,500	$82,500	$165,000
Total Program Budget	**$218,200**	**$187,100**	**$405,300**

The project budget, including salaries, benefits, materials, professional services, and rebates, is presented in greater detail in an attached table, Appendix A, Program Budget.

2. Cost Sharing

EBMUD proposes to fund rebates at rate of $150 for multi-family installations where machine usage is assumed to average five turns per day and $250 in Laundromats where machine usage is assumed to average 10 turns per day. Higher machine usage corresponds with greater savings and the tier rebates ensure that the incentives will be locally cost-effective.

The EBMUD share of the total program cost is $165,000 or 41 percent of the total budget. Currently, EBMUD has capital appropriation in its Water Conservation Division budget to meet cost-sharing commitments.

3. Benefit Summary and Breakdown

The program will result in quantifiable benefits from the installation of 900 water and energy efficient clothes washers. A 10-year measure life is assumed. Table 4 summarizes estimates of projected water and energy savings and the gross discounted value of saved water and energy. The total net benefit, after discounted costs have been subtracted, is $1,767,000.

Table 4: Summary of Quantifiable Project Benefits

Energy and Water Savings	
Total energy savings includes electrical and gas savings from hot water heating, mechanical efficiency, and clothes drying savings with gas savings in equivalent (kWH).	45,202,380
Total Water Savings (Acre Feet)	1,046
Discounted Consumer Benefits	
Value of rebates received	$234,000
Avoided cost of water, wastewater and sewer	$1,201,000
Avoided cost of energy	$1,002,000
Total Discounted Consumer Benefits	$2,437,000
Discounted EBMUD Benefits at $250/AF including water, wastewater, energy, operations and maintenance, and environmental externalities.	$177,000
Total Discounted Benefits	**$2,614,000**

In additional benefits not quantified above, accrue from affecting market transformation through incentives. Increased market saturation of high-efficiency clothes washers will likely improve consumer confidence in and acceptance of the technology. As high-efficiency washers gain greater market share, their incremental cost relative to standard efficiency units is expected to decline. Another benefit of increase product acceptance and market share is greater impetus towards higher efficiency standards. Higher regulatory standards have the potential to obviate the investment of public funds in high-efficiency washers for water and energy savings purposes.

4. Assessment of Costs and Benefits

Table 5 provides a summary of discounted benefits, cost, and the benefit-cost ratio:

Table 5: Benefit/Cost Assessment Summary

Perspective	Benefit	Cost	Net Benefit/Cost	B/C
EBMUD	176,000	151,000	25,000	1.17
Participant	2,437,000	495,000	1,942,000	4.92
State	0	200,000	-200,000	-
Total	**2,613,000**	**846,000**	**1,767,000**	**3.09**

Appendix B, Economic Analysis Worksheet, lists all major analysis assumptions and shows the methodology used to assess costs and benefits. All benefits and costs are expressed in year 2002 dollars and are not adjusted for expected general inflation. All cost and benefits are converted to their present value prior to aggregating them using a six percent discount rate.

Appendix A
Program Budget

	First Year Cost			Second Year Cost			Total Cost		
Item	**Proposed Funding**	**EBMUD Cost Share**	**Total First Year Cost**	**Proposed Funding**	**EBMUD Cost Share**	**Total Second Year Cost**	**Total Proposed Funding**	**Total EBMUD Cost Share**	**Total Cost**
Grant Administration Costs									
Salaries & Benefits	$5,950	$0	$5,950	$5,950	$0	$5,950	$11,900	$0	$11,900
Other	$2,000	$0	$2,000	$1,000	$0	$1,000	$3,000	$0	$3,000
Total Grant Administration Costs	**$7,950**	**$0**	**$7,950**	**$6,950**	**$0**	**$6,950**	**$14,900**	**$0**	**$14,900**
Program Administration Costs									
Salaries & Benefits	$29,050	$0	$29,050	$19,650	$0	$19,650	$48,700	$0	$48,700
Other	$4,000	$0	$4,000	$2,000	$0	$2,000	$6,000	$0	$6,000
Total Program Administration Costs	**$33,050**	**$0**	**$33,050**	**$21,650**	**$0**	**$21,650**	**$54,700**	**$0**	**$54,700**
Marketing/Advertising/Outreach Costs									
Prof. Services	$21,600	$0	$21,600	$14,400	$0	$14,400	$36,000	$0	$36,000
Other Direct Costs	$15,000	$0	$15,000	$5,000	$0	$5,000	$20,000	$0	$20,000
Total Marketing/Advertising/Outreach Costs	**$36,600**	**$0**	**$36,600**	**$19,400**	**$0**	**$19,400**	**$56,000**	**$0**	**$56,000**
Direct Implementation Costs									
450 Units Rebated per Year	**$45,000**	**$82,500**	**$127,500**	**$45,000**	**$82,500**	**$127,500**	**$90,000**	**$165,000**	**$255,000**
Monitoring and Assessment Costs									
Monitoring and Assessment Plan	$2,500	$0	$2,500	$0	$0	$0	$2,500	$0	$2,500
Quarterly reports (8)	$2,000	$0	$2,000	$2,000	$0	$2,000	$4,000	$0	$4,000
Phone survey instrument	$4,000	$0	$4,000	$0	$0	$0	$4,000	$0	$4,000
Phone surveys	$2,250	$0	$2,250	$2,250	$0	$2,250	$4,500	$0	$4,500
Phone survey analysis	$0	$0	$0	$1,000	$0	$1,000	$1,000	$0	$1,000
Site visits	$1,350	$0	$1,350	$1,350	$0	$1,350	$2,700	$0	$2,700
Final report	$0	$0	$0	$4,000	$0	$4,000	$4,000	$0	$4,000
Misc. Monitoring and Assesment Expenses	$1,000	$0	$1,000	$1,000	$0	$1,000	$2,000	$0	$2,000
Total Monitoring Assessment Costs	**$13,100**	**$0**	**$13,100**	**$11,600**	**$0**	**$11,600**	**$24,700**	**$0**	**$24,700**
TOTAL BUDGET	**$135,700**	**$82,500**	**$218,200**	**$104,600**	**$82,500**	**$187,100**	**$240,300**	**$165,000**	**$405,300**
Number of units rebated annaully			450			450			
Number of sites			90			90			26675
Number for multi-family units rebated			300			300			
Number of Coin Laundry and Other units rebated			150			150			
Grant Funded per Rebate Amount			$100			$100			
Multi-family EBMUD rebate Amount			$150			$150			
Coin Laundry and Other Rebate Amount			$250			$250			
								41%	

Appendix B
Economic Analysis Worksheet

					Benefits ($)									
Fiscal Year	**Number of Units Installed**	**Annual Energy Savings (kWh/yr)**	**Incremental Water Savings (AF/yr)**	**Annual Water Savings (AF/yr)**	**Amount of Rebate Received**	**Total Discounted Benefits**	**Avoided cost of water**	**Total Discounted Benefits**	**Avoided cost of power**	**Total Discounted Benefits**	**Avoided cost of water and wastewater**	**Total Discounted Benefits**	**Incremental Hardware Cost**	**Total Discounted Costs**
					(Consumer)		**(Consumer)**		**(Consumer)**		**(EBMUD)**		**(Consumer)**	
2002	450	2,260,119	52.3	52	127,500	120,283	83,979	79,226	70,043	66,078	13,081	11,642	270,000	254,717
2003	450	4,520,238	52.3	105	127,500	113,475	167,959	149,483	140,085	124,675	26,162	21,966	270,000	240,299
2004		4,520,238		105	0	0	167,959	141,022	140,085	117,618	26,162	20,723	0	0
2005		4,520,238		105	0	0	167,959	133,039	140,085	110,961	26,162	19,550	0	0
2006		4,520,238		105	0	0	167,959	125,509	140,085	104,680	26,162	18,443	0	0
2007		4,520,238		105	0	0	167,959	118,404	140,085	98,755	26,162	17,399	0	0
2008		4,520,238		105	0	0	167,959	111,702	140,085	93,165	26,162	16,414	0	0
2009		4,520,238		105	0	0	167,959	105,380	140,085	87,891	26,162	15,485	0	0
2010		4,520,238		105	0	0	167,959	99,415	140,085	82,916	26,162	14,609	0	0
2011		4,520,238		105	0	0	167,959	93,787	140,085	78,223	26,162	13,782	0	0
2012		2,260,119		52	0	0	83,979	44,239	70,043	36,898	13,081	6,501	0	0
Totals:	900	45,202,380	105	1,046	255,000	233,758	1,679,589	1,201,206	1,400,853	1,001,860	261,619	176,514	540,000	495,016

Annual Per Unit Gross Energy Savings*													EBMUD avoided cost of conserved water, wastewater and energy savings ($/AF) =	250
	Gas (therms) =	144											Discount rate (real) =	6.0%
	Gas (kWh equivalent)** =	4,221											Water savings (gpy/unit) =	37,887
	Electricity (kWH) =	801											Energy Savings (kWh/yr/unit) =	5,022
	Total (kWH) =	5,022											#Consumer power cost savings ($/yr/rebate) =	156
* Source =	*Energy Star Commercial Clothes Washer Rebate Program Proposal,*												##Consumer water, wastewater, and sewer cost savings ($/yr/rebate) =	187
	Before the Public Utilities Commission of the State of California, January 15, 2002,												Gross incremental cost of high-efficiency clothes washer ($/unit) =	600
	page 18. (includes washing and drying energy savings).												State per unit cost of rebate ($) =	100
**	Conversion factor = one therm per 29.3 kWH												Agency weighted average per unit cost of rebate ($) =	183
													Agency cost to administer rebate ($) =	0
Annual Per Unit Gross Water Savings (gallons)													State cost to administer rebate ($) =	143
***Average Savings/Load =		17.3												
	Laundromat per year =	50,516	(Assumes 8 turns per day)								#Based on PG&E year 2002 retail power rates,			
	Multi-family per year =	31,573	(Assumes 5 turns per day										published at www.pge.com	
	Weighted Average =	37,887	(Assumes 1/3of installations in Laundormat, 2/3 multi-family)						##Based on EBMUD water and wastewater rates of $1.78 and $0.99per CCF,					
*** Source =	*Preliminary Estimates of Energy & Water Savings Potential for Residential Clothes Washers,*										and City of Oakland sewer rates of $0.79 per CCF			
	Commercial Clothes Washers, Commercial Dishwashers , California Urban Water Conservation Council, March 20, 2001													

Appendix B
Economic Analysis Worksheet

Costs ($)								
Financial Incentives	Total Discounted Costs	Administra-tive Expenses	Total Discounted Costs	Financial Incentives	Total Discounted Costs	Administra-tive Expenses	Total Discounted Costs	Net Present Value ($)
(State)		(State)		(EBMUD)		(EBMUD)		
45,000	42,453	64,325	60,684	82,500	77,830	0	0	-158,455
45,000	40,050	64,325	57,249	82,500	73,425	0	0	-1,424
0	0	0	0	0	0	0	0	279,363
0	0	0	0	0	0	0	0	263,550
0	0	0	0	0	0	0	0	248,632
0	0	0	0	0	0	0	0	234,558
0	0	0	0	0	0	0	0	221,281
0	0	0	0	0	0	0	0	208,756
0	0	0	0	0	0	0	0	196,940
0	0	0	0	0	0	0	0	185,792
0	0	0	0	0	0	0	0	87,638
90,000	82,503	128,650	117,933	165,000	151,255	0	0	1,766,630

RICHARD W. HARRIS, P.E.

Manager Of Water Conservation
East Bay Municipal Utility District

As Water Conservation Manager, Richard Harris oversees the development and implementation of EBMUD's Water Conservation Master Plan in support of long-term water supply and demand management goals. With an annual budget of more than $5 million, and a total projected program budget of $92 million, EBMUD's water conservation efforts represent one of the largest staffed and budgeted conservation programs among major water utilities in the state. Mr. Harris is a licensed civil engineer and has been at EBMUD for more than 11 years. Prior to joining the Water Conservation Division, he managed the District's Water Recycling Program. Mr. Harris continues to serve as a District spokesperson on water use efficiency. Mr. Harris also serves as the EBMUD Energy Conservation Coordinator to the California Flex Your Power Campaign. Mr. Harris has more than 17 years experience in the environmental systems planning, engineering and resource management, and worked a number of years in the private sector specifically in the environmental engineering and energy management fields for Combustion Engineering Environmental, Inc. and Guaranteed Energy Savings, Inc.

Key Experience:

4/99 – Pres. *Manager of Water Conservation - EBMUD*
Responsible for managing the District's Water Conservation Division and directing the planning and implementation of the Water Conservation Master Plan to achieve 34 million gallons per day in water savings by the year 2020. Manage 19 professional staff and administer a $92 million capital and operating program budget, totaling in excess of $5 million annually.

4/98 - 4/99 *Senior Civil Engineer – EBMUD, DERWA*
Supervisor of ten professional staff in the Office of Reclamation and Wastewater Planning Sections. Served as the Engineering Program Manager for the DSRSD-EBMUD Recycled Water Authority, responsible for supervising and implementing a joint $90 million water recycling project. Served as a member of the Executive Management Board and Chair of the Finance Committee for the Bay Area Regional Water Recycling Program.

11/96 - 4/98 *Supervising Administrative Engineer – EBMUD*
Program Manager for $120 million Water Recycling Program. Responsible for planning and administration of new capital projects ($7M - $60M), operating projects ($38M) and consultant management. District spokesperson on all water recycling matters with the community and elected officials.

7/87 - 7/89 *Technical Engineer – Combustion Engineering Environmental, Inc.*
Conducted environmental science and engineering field operations. Participated in all phases of the Materials Damage Study for the California Air Resources Board, including site installation and monitoring, sample preparation and processing, and report writing. A member of technical team conducting field services for the Rocketdyne Wastewater Sampling Program. Services included flow meter installation and calibration, channel design, field sampling, laboratory preparation and report writing.

1/85 - 11/86 *Manager, Southern Pacific Region/Conservation Engineer - Guaranteed Energy Savings, Inc.*
Responsible for field service activities in California, Arizona, New Mexico and Texas. Responsibilities included marketing, new project development, site surveys, and management support of energy conservation systems for contracts exceeding $2 million. Performed computer system installation and complete electrical system support. Directed the work of the field electrical crews on energy savings programs; conducted contract negotiations.

Education:

Masters Degree, Civil Engineering, University of California, Los Angeles.
Bachelors Degree, Business Economics, University of California, Santa Barbara.
Bachelors Degree, Environmental Studies, University of California, Santa Barbara.

Affiliations:

Richard serves on the Board for the California Urban Water Conservation Council and is active in the American Water Works Association, Water Environment Federation and WateReuse Association.

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Phone (510) 287-1802
E-mail mhazinsk@ebmud.com

Michael S. Hazinski

Work Experience

East Bay Municipal Utility District (EBMUD) — Oakland, CA

Water Conservation Supervisor (1998 – Present)

- Administers financial incentive programs for water conservation retrofits.
- Represents EBMUD on interagency water conservation committees.
- Coordinates regional conservation program implementation with other agencies.
- Procure consulting services and administer contracts for research and program implementation.
- Evaluate programs and prepare reports for management, the Board of Directors, and regulatory agencies.
- Recruit, train, and supervise water conservation staff.

Water Conservation Representative (1993 – 1998)

- Developed and implemented a financial incentive program for improving water use efficiency among industrial, commercial, and institutional water users.
- Conducted water use efficiency assessments for commercial and industrial customers.
- Developed and implemented marketing strategies for enlisting customer participation in water efficiency programs.
- Managed a database development project and maintained program databases.
- Developed a model using MS Excel worksheets for estimating and projecting water savings from EBMUD water conservation programs.

Omi Lang Associates, Landscape Architects — San Francisco, CA

Marketing Coordinator (1990 – 1991)

- Organized and coordinated promotional materials and activities.
- Performed landscape architectural drafting and computer aided drafting, and conducted library research.

Education

East Bay Municipal Utility District — Oakland, CA

Managers and Supervisors Training Certificate(1998 – 2000)

- Training curriculum for managers and supervisors comprised of classes on various topics with an emphasis on communication skills.

San Francisco State University — San Francisco, CA

Bachelor of Arts (1987 - 1990)

- Major in Design And Industry with special emphasis on industrial research and development.

Landscape Architecture and Ornamental Horticulture Studies — San Francisco, CA

- Landscape Architecture Training: Eleven semester-long courses at the University of California-Berkeley Extension Landscape Architecture Certificate Program (1988 – 1991).
- Ornamental Horticulture Studies: Courses at City College of San Francisco (1985 – 1987).

Publications and Presentations

Water Efficient Landscape Guidelines American Water Works Association, 1993. Co-authored a handbook for the development and implementation of landscape water-efficiency standards.

Water Conservation Division FY00 Annual Report East Bay Municipal Utility District, 2000. Edited and managed production of a 48-page, four-color publication for national distribution.

Presentations Numerous presentations to community groups, professional associations, and at water industry conferences.

James W. Carmody, CHG

Water Conservation Representative
East Bay Municipal Utility District, Oakland, California

EXPERIENCE SUMMARY

- Water Conservation Representative and member of the Commercial, Industrial and Institutional Group of the Water Conservation Division. Primary responsibilities include conducting water use surveys for industrial and commercial customers, preparing water use balance, estimating water savings through water conservation measures and calculating rebate amount based on measure life, water savings and avoided costs.
- Managed *Pilot Commercial Clothes Washer Rebate Program* that was a collaboration between Pacific Gas & Electric Company and EBMUD. Prepared application and marketing materials and targeted equipment distributors, commercial laundries, Home Owners Associations and Rental Housing Associations with promotional mailings. Program participation increased by 25% over previous rebate program.
- Liaison with Alameda County and Contra Costa County Green Business Programs, and conducts Water Conservation inspection for businesses seeking Green Business certification
- Member of Division that received EBMUD's 2001 *Speaker of the Year Award*, the first time it has been presented to a division.

EDUCATION

Bachelor of Arts, Geology, 1978, San Francisco State University, San Francisco, California
Additional Graduate Studies Include: *Ground Water Hydrology, Fundamentals of Engineering Geology,* and *Conducting Aquifer Pumping Tests* offered through University of California Extension and California Groundwater Association.

REGISTRATIONS

Water Conservation Practitioner Level I, American Water Works Association, No. 01044
Registered Geologist, State of California, No. 4872
Certified Hydrogeologist, State of California, No. HG 217

PROFESSIONAL SUMMARY

2000 to present	Water Conservation Representative, *East Bay M.U.D., Oakland, CA*
1988 to 1999	Senior Project Manager, *Weiss Associates, Emeryville, CA*
1987 to 1988	Senior Staff Geologist, *Converse Environmental Consultants California, San Francisco, CA*
1984 to 1987	Senior Staff Geologist, *Clayton Environmental Consultants, Inc., Pleasanton, CA*
1982 to 1984	Staff Geologist, *Carl W. Garbe, P.E., San Carlos, CA*
1980 to 1982	Geologist, Consolidated Placer Dredging, Inc., San Francisco, CA